Transferable Lessons from Serious Operational Incidents / Investigations

Issue No:	NR/OPS/024	Date Issued:	22/06/2018

Management of Bridge Strikes

Bridge 86, Stoke Road, Stoke-on-Trent

Summary of incident:

On the 18 May 2018 a curtain sided Heavy Goods Vehicle (HGV) collided with bridge 86, Stoke Road, Stoke-on-Trent. As a direct result of the impact, the Shift Signaller Manager (SSM) based at Stoke-on-Trent (SOT) Signalling Control Centre (SCC), located in the vicinity of bridge 86, heard the collision and exited the SCC to investigate.

The SSM observed that the HGV had hit the collision protection beam only and authorised trains to continue to proceed at line speed over bridge 86; although the Signal Box Special Instructions (SBSI) advised a double amber dispensation must be implemented.

No line examinations or cautioning was implemented during the immediate aftermath of the incident. Additionally, the incident was not reported through the correct channels to Route Control and as a result the incident was not logged and the relevant response of a Bridge Strike Nominee (BSN) / Examiner (BSE) was not dispatched to site.

The incident came to light with Route Control by the means of Staffordshire Police contacting the Route Control Manager (RCM) at Rugby Rail Operating Centre (ROC) via the emergency contact number displayed at bridge 86. Consequently, the Incident Controller (IC) for the north sector of West Coast South investigated the report and contacted the SSM directly to which it became evident that three passenger services had traversed bridge 86 without caution.

The correct procedure for double amber dispensation was subsequently followed and normal working of the Down and Up lines was reinstated after 'no defect' statements were reported by the drivers of the examining trains. A later examination of the bridge by the BSN and BSE confirmed no damage.

Learning points:

The SSM observed that the HGV had collided with the collision protection beam only which was protecting a redundant span. As the HGV had only come into contact with collision protection beam, the SSM decided normal running could continue. The SSM's rationale was logical and the intentions were good, they did not hold the appropriate competency to make the decision that normal running could continue. It is important to note that the installation of collision protection beams REDUCES the risk of structural damage, not prevents it. Typically, the additional defence of a collision protection beam will often safeguard the bridge; however this is not always the case.

Furthermore, the installation of a collision protection beam may be part of the same bridge structure. This will be factored in to the original bridge assessment by the structures engineer when categorising the bridge. For example, a bridge without a collision protection beam may be categorised as a red bridge; but the installation of collision protection beams could upgrade the structure status to allow double amber dispensation.

Where the bridge strike involves a redundant span, damage limits are not applicable to the actual redundant span; however the damage limits of an adjacent span that carries operational tracks must not be exceeded. The only way to determine damage status is through an examination. Likewise, the categorisation of a bridge that incorporates a redundant span and collision protection beam will be determined by factoring in the other bridge characteristics; but it is important to note that all bridges are different, and for this reason it is important to follow the operating instructions contained within the SBSI / Bridge Strike Appendix.

The procedure of reporting bridge strikes MUST always be followed by means of contacting Route Control even if the strike was with the collision protection beam only; as the integrity of the beam, its attachments and associated structure may have been compromised making it less effective should further collisions occur. If Route Control is unaware, the event cannot be logged, nor will the relevant response personnel (BSN / BSE) be distributed.

In addition, and although this had no reflection on the outcome of the event, there was confusion with on-call staff and the application of the Light Vehicle (LV) instruction when a vehicle strikes a collision protection beam. The LV instruction MUST only be applied to the conditions stipulated in the National Operating Procedures (NOP) - *NR/L3/OPS/045/3.34* and other bridge strike documentation.

Points to consider and further actions and precautions:

Although many bridge strike incidents cause little or no damage to the railway infrastructure, some may cause serious damage with the potential to cause a major incident. Every bridge is independently assessed for robustness by structures engineers and will be categorised accordingly factoring in the construction material. The bridge assessment will determine if dispensation can be authorised to allow trains to run prior to a structure examination by a BSN or BSE, and as a direct result of the assessment the relevant operating instructions will be contained within the SBSI / Bridge Strike Appendix. It is critical that the relevant operating instructions MUST be followed to maintain operational safety.

Briefed out to:	Signallers, SSMs, Route Control, Response & On-Call Staff.